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MEMBERSHIP IN NATIONAL HEALTH INSURANCE AMONG WORKERS IN INDONESIA

Keanggotaan Jaminan Kesehatan Nasional di Kalangan Pekerja di Indonesia

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Abstract

Background: The government regulates National Health Insurance (NHI), making it mandatory for everyone. However, at this time, only some, including workers, are NHI members. Moreover, the government regulates who pays these workers' premiums.
Aims: The study aimed to analyze the disparities of occupation type in NHI membership among workers in Indonesia.
Methods: We involved 22,275 workers in the analysis. The analyzed variables included NHI's membership, occupation type, residence type, age group, gender, education level, marital status, and wealth status. The study employed binary logistic regression in the final step.
Results: The results showed that government employees were 11.864 times more likely to be a member of NHI than the informal sector (95%CI 11.811-11.917). The private sector was 1.646 times more likely than the informal sector to be an NHI member (95%CI 1.643-1.648). Meanwhile, entrepreneurs were 0.828 times less likely to be NHI members than the informal sector (95%CI 0.827-0.829). The study found six control variables related to NHI membership: residence, age, gender, education, marital, and wealth status.
Conclusion: The study concluded that NHI membership disparities existed based on occupation type. Accordingly, government employees, the private sector, the informal sector, and entrepreneurs are the most likely to become NHI members.

Keywords: health insurance, health policy, national health insurance, occupation type.

Abstrak

Latar belakang: *Pemerintah mengatur bahwa Jaminan Kesehatan Nasional (JKN) wajib bagi setiap orang. Sementara saat ini baru sebagian saja yang menjadi anggota JKN, termasuk pekerja. Lebih lanjut pemerintah mengatur siapa yang harus membayar premi para pekerja.*
Tujuan: *Menganalisis disparitas jenis pekerjaan dalam kepesertaan JKN pada pekerja di Indonesia.*
Metode: *Studi melibatkan 22.275 pekerja dalam analisisnya. Variabel yang dianalisis meliputi keanggotaan JKN, jenis pekerjaan, jenis tempat tinggal, kelompok umur, jenis kelamin, tingkat pendidikan, perkawinan, dan status kekayaan. Penelitian ini menggunakan regresi logistik biner pada langkah terakhir.*
Hasil: *Hasil penelitian menunjukkan bahwa pegawai pemerintah mempunyai peluang 11,864 kali lebih besar untuk menjadi peserta JKN dibandingkan sektor informal (95% CI 11,811-11,917). Sektor swasta memiliki kemungkinan 1,646 kali lebih besar untuk menjadi anggota JKN dibandingkan sektor informal (95% CI 1,643-1,648). Sementara itu, wiraswasta memiliki kemungkinan 0,828 kali lebih kecil untuk menjadi anggota JKN dibandingkan sektor informal (95% CI 0,827-0,829). Studi juga menemukan enam variabel kontrol yang terkait dengan kepesertaan JKN: tempat tinggal, umur, jenis kelamin, pendidikan, perkawinan, dan status kekayaan.*
Kesimpulan: *Terdapat disparitas jenis pekerjaan pada keanggotaan JKN. Berdasarkan jenis pekerjaan, secara berurutan yang paling berpeluang menjadi anggota JKN adalah pegawai pemerintah, swasta, sektor informal, dan wirausaha.*

Kata kunci: *asuransi kesehatan, kebijakan kesehatan, jaminan kesehatan nasional, jenis pekerjaan.*

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Introduction

Starting 2014, Indonesia has implemented the National Health Insurance (NHI) scheme administered by the Health Social Security Administration Agency (HSSAA) (The Republik of Indonesia, 2011). This initiative necessitates the participation of the entire community, including individuals from outside Indonesia who have been employed there in the past six months.

The implementation of the NHI program is to deliver health protection by offering healthcare benefits to fulfil participants' fundamental health requirements. The government aims for universal participation in the National Health Insurance by 2019 (The Ministry of Health of The Republic of Indonesia, 2014). However, by the end of 2022, the number reached only 248,771,083 participants (Health Social Security Administration Agency (HSSAA), 2022). The situation means that NHI participants still comprise 90.2% of Indonesia's total population, totaling 275,773,800 (Indonesian Central Statistics Agency, 2022).

In the context of sustainable development goals (SDGs), governments of many nations have instituted national health insurance programs with differing levels of coverage. In economically established countries, health insurance coverage can cover the entire population. In Taiwan, the NHI system installed in 1995 initially covered 92% of the people, but by the end of 2014, it had covered 99.96% of the total population (Lin *et al.*, 2018). Other developed countries, such as Canada and Australia, have even succeeded in adequately financing the health needs of their entire population (Dalinjong and Laar, 2012). Strong health insurance coverage performance correlates with the portion of the health budget channeled through public and private health insurance schemes (Wagstaff and Neelsen, 2020). The condition is inversely proportional to the needs in lower-middle-class countries.

Simultaneously, socioeconomic obstacles restrict the accessibility of healthcare via health insurance (Amu and Dickson, 2016). The absence of strong political support from all state administrators is also a challenge in achieving comprehensive insurance coverage. In the African region, of the eight sub-Saharan countries that have introduced NHI systems, only three countries (Gabon, Ghana, and Rwanda) have relatively better NHI coverage. Even then, the overage is less than half of the population (Cashin and Dossou, 2021). For example, in Ghana, since its introduction in 2005, the proportion of active NHI members is only about 41% of the total population (Christmals and Aidam, 2020). Even in Nigeria, the government introduced the plans for the social health insurance scheme in 2000, and the coverage of participants is only about 4% of the entire population. Even then, most of the members are government employees (Ssewanyana and Kasirye, 2020).

The most effective method to provide universal access to necessary health care is to provide help to individuals who are impoverished or near the poverty threshold (Mao *et al.*, 2020; Denny *et al.*, 2022; Wulandari, Laksono, Prasetyo, *et al.*, 2022). In line with the condition, in the NHI program in Indonesia, contributions or premiums for people experiencing poverty are to be paid in full as Contribution Assistance Recipients (CAR) by the Indonesian government. Meanwhile, for formal workers, referred to as paid workers, the employer registers their participation in the national health insurance. Included in this group are government employees. The premium for paid workers is 5% of the monthly salary provided the employer pays 4%, and the participant pays 1% (The Republik of Indonesia, 2011)Apart from these two groups, everyone, including all family members, must register and produce their premiums regularly every month.

The propensity of individuals to voluntarily engage in health insurance is also affected by employment position and variables such as educational attainment, health condition, and the caliber of healthcare services (Booysen and Hongoro, 2018; Fite *et al.*, 2021; Akokuwebe and Idemudia, 2022). Individuals with a steady job and sufficient income do not have a problem registering

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as health insurance participants because they can pay premiums regularly. Conversely, farmers, fishermen, unskilled laborers, and street vendors do not have jobs or steady incomes, and they are reluctant to enroll because they cannot pay premiums regularly (Kaso *et al.*, 2022). Unsurprisingly, health insurance uptake in the informal sector tends to be much lower (Andayani *et al.*, 2021; Akokuwebe and Idemudia, 2022). This condition is exacerbated by the absence of efforts to facilitate the participation of people who work in the unofficial business and the lack of appropriate mechanisms for collecting contributions from individuals without a steady income (Onwujekwe *et al.*, 2019; Doshmangir *et al.*, 2021). Based on what was said in this situation, the study aimed to analyze the disparities of occupation type in NHI membership among workers in Indonesia.

Method

Data Source

The Indonesian Ministry of Health conducted a national-level survey titled "Abilities and Willingness to Pay, Fee, and Participant Satisfaction in Implementing National Health Insurance in Indonesia in 2019." The study utilized secondary data from a previous investigation, focusing on the Indonesian workforce. 22,275 workers were included as respondents, selected through a stratified, multistage random sampling method.

Outcome Variable

We applied for NHI membership as an outcome factor. We considered the respondent's participation in the NHI to be NHI membership, regardless of whether they are a single member, a mandatory member (military, police, or governmental servant), one covered by the business, or a beneficiary of government assistance through donations. There are two categories of NHI participation: non-members and members.

Exposure Variable

We used the type of occupation as an exposure variable. There were four categories of occupation type: government employee (civil servant, army, police, pensionary), entrepreneur, informal sector (farmer, fisherman, laborer), and private sector. The type of occupation is determined based on the respondent's confession.

Control Variables

We employed six factors as controls in the study: age group, gender, educational achievement, marital status, and financial status. The dwelling type consists both rural and urban categories. We divided the study's samples into those aged 17, 18–64, and 65. The study also divided gender into two categories: female and male. The three stages of education were primary, secondary, and post-secondary. Furthermore, the survey divided the population's marital status into three categories: never married, married, and divorced or widowed.

The survey utilized the wealth index to evaluate the financial condition and used an estimated weighted total household expenditure to calculate the wealth index. In the meantime, original data on household expenditures on things like food, housing, health insurance, and other expenses were used by the survey to calculate the wealth index. The poll also separated the five wealth index categories into the poorest, more destitute, middle, wealthier, and most prosperous (Wulandari, Laksono, Prasetyo, *et al.*, 2022).

Data Analysis

The study applied the Chi-Square test early in the sample to compare two variables. The analysis also used a collinearity evaluation to ensure that the final regression model did not correlate strongly with the independent variables. We reached the conclusion using a binary logistic regression. We evaluated the multivariate association between all independent variables and NHI ownership as the dependent factor. We utilized the IBM SPSS 26 software for statistical analysis.

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Additionally, we applied ArcGIS 10.3 from ESRI Inc., Redlands, CA, USA, to illustrate the distribution of NHI members among workers across Indonesia's provinces. The Indonesian Statistics provided a shapefile containing administrative boundary polygons for this analysis.

Result and Discussion

The 1945 Constitution's Article 28 H and Article 34 are next, then Law Number 40/2004 about the National Social Security System and Law Number 24/2011 about the Creation of the Health Social Security Administration Agency (HSSAA), and Presidential Regulation Number 12 of 2013 and Juncto Regulation President Number 111 of 2013 about NHI, are forms of the government's commitment to providing welfare (welfare state) in the form of guaranteed health protection for all Indonesian people (Macinko *et al.*, 2018).

According to the Central Statistics Agency, there will be 77.9 million people working in the informal sector in 2021. This number has increased by 0.3% from 2020, which amounted to 77.68 million people. The contribution assistance the central and regional governments paid has increased from 45.68% in 2020 to 46.68% in 2021. Meanwhile, between 2020 and 2021, it was still 9%-10 % in March and September 2021 (Indonesian Central Statistics Agency, 2022).

Presidential Regulation Number 64 of 2020 states that CAR paid by the state and local governments will contribute to ensuring health insurance continuity and financial health based on fiscal capacity. Furthermore, the contribution of participants in the PW is 5% (the employer pays 4%, and the participants pay 1%) based on the provincial, regional, or city minimum wage that has been determined. Non-paid worker and paid worker participant fees depend on the treatment room, and they are paid monthly on behalf of Non-paid worker and paid worker participants or other parties on behalf of the participants. The amount of the class III Non-paid worker and paid worker treatment room fees is the same as the fees paid by the government for CAR (President of the Republic of Indonesia, 2020).

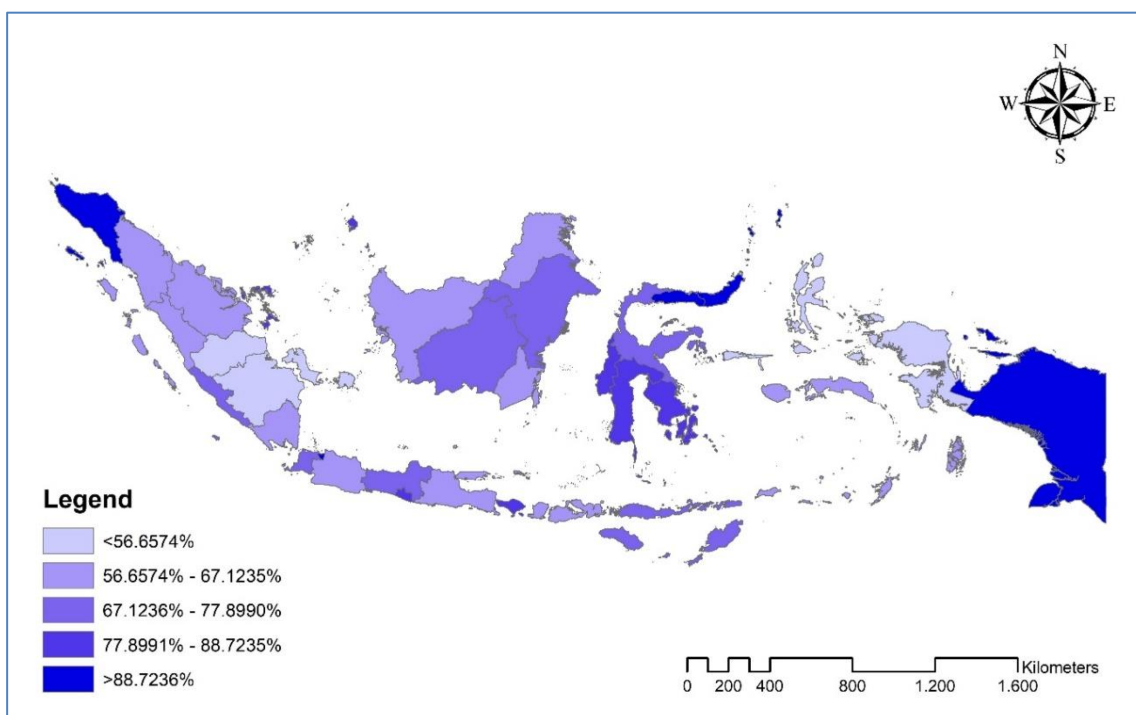

Figure 1. The Map of NHI Members Distribution among Workers in Indonesia’s Province in 2019

Table 1. Descriptive statistics of occupation type and demographic characteristics of workers in Indonesia (*n*=22,275)

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Characteristics	Occupation Type				p-value
	Government employee (n=1,359)	Privat sector (n=3,415)	Entrepreneur (n=5,755)	Informal sector (n=11,746)	
NHI membership					< 0.001
Non-member	3.7%	20.1%	35.1%	33.4%	
Member	96.3%	79.9%	64.9%	66.6%	
Residence type					< 0.001
Urban	52.8%	47.1%	35.8%	18.7%	
Rural	47.2%	52.9%	64.2%	81.3%	
Age group					< 0.001
≤ 17	0.8%	0.6%	0.3%	1.4%	
18 - 64	78.2%	98.4%	94.8%	89.1%	
≥ 65	21.0%	1.0%	4.9%	9.4%	
Gender					< 0.001
Male	64.9%	70.6%	58.7%	65.2%	
Female	35.1%	29.4%	41.3%	34.8%	
Education level					< 0.001
Primary	12.1%	22.9%	55.6%	78.5%	
Secondary	36.3%	54.5%	37.9%	19.0%	
Higher	51.7%	22.6%	6.4%	2.5%	
Marital status					< 0.001
Never married	6.8%	39.9%	13.4%	14.4%	
Married	81.9%	57.6%	78.0%	76.8%	
Divorced/Widowed	11.3%	2.5%	8.6%	8.9%	
Wealth status					< 0.001
Poorest	5.9%	8.8%	14.5%	30.5%	
Poorer	9.4%	13.4%	18.4%	23.9%	
Middle	13.4%	17.6%	20.7%	19.7%	
Richer	21.5%	25.9%	21.5%	15.3%	
Richest	49.8%	34.3%	24.9%	10.6%	

Based on the results, the ratio of workers' NHI membership in Indonesia is 69.5%. Moreover, Figure 1 shows that the higher proportion of NHI members among workers tends to be in Indonesia's eastern and western ends. Furthermore, Table 1 provides descriptive statistics on the occupation type and demographic characteristics of workers in Indonesia.

The result indicates that government employees have more NHI members than other occupations. Regarding the residence type, workers in rural regions possess a more significant percentage in all occupations, except those in urban areas, which have a higher ratio of government employees.

Based on age group, workers aged 18-64 have a higher ratio in all occupations. According to gender, males dominated in all occupation categories. Meanwhile, regarding education level, workers in primary education have a higher percentage in entrepreneur and informal sector groups.

Table 1 shows that married workers dominate all occupation types compared to other marital statuses. Furthermore, regarding wealth status, the poorest have the highest proportion in the informal sector group.

Table 2. The result of binary logistic regression of NHI membership among workers in Indonesia (*n*=22,275)

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Predictor	Member of NHI			
	p-value	Adjusted Odds Ratio	95% Confidence Interval	
			Lower Bound	Upper Bound
Occupation: Government employee	<0.001	11.864	11.811	11.917
Occupation: Private sector	<0.001	1.646	1.643	1.648
Occupation: Entrepreneur	<0.001	0.828	0.827	0.829
Occupation: Informal sector	-	-	-	-
Residence: Urban	<0.001	1.506	1.504	1.507
Residence: Rural	-	-	-	-
Age group: ≤ 17	-	-	-	-
Age group: 18 - 64	<0.001	2.232	2.223	2.241
Age group: ≥ 65	<0.001	2.629	2.618	2.641
Gender: Male	<0.001	0.825	0.824	0.825
Gender: Female	-	-	-	-
Education: Primary	-	-	-	-
Education: Secondary	<0.001	1.056	1.055	1.057
Education: Higher	<0.001	1.094	1.092	1.096
Marital: Never married	-	-	-	-
Marital: Married	<0.001	0.976	0.975	0.977
Marital: Divorced/Widowed	<0.001	0.885	0.884	0.887
Wealth: Poorest	-	-	-	-
Wealth: Poorer	<0.001	1.210	1.208	1.211
Wealth: Middle	<0.001	1.127	1.126	1.129
Wealth: Richer	<0.001	1.158	1.156	1.159
Wealth: Richest	<0.001	1.080	1.078	1.081

The collinearity evaluation of NHI ownership was the analysis that came after. The results indicate a lack of association between the independent variables. The tolerance value is more significant than 0.10, and all factors' variance inflation factor value is concurrently smaller than 10.00. The report stated that the regression model showed no signs of multicollinearity, supporting the test's conclusion.

Table 2 expresses the binary logistic regression result of NHI ownership in Indonesia. The government employee is 11.864 times more likely to be an NHI member than the informal sector (95% CI 11.811-11.917). The private sector is 1.646 times more likely than the informal fieldwork to be an NHI member (95% CI 1.643-1.648). Moreover, entrepreneurs are 0.828 times less likely to be NHI members than the informal industry (95% CI 0.827-0.829).

The government and private sectors were more likely than the informal sector to be NHI members; meanwhile, entrepreneurs were less likely to be NHI members than informal fieldworkers. The condition means many government employees, private employees, and entrepreneurs are HSSAA participants. Still, in this study, several things need to be underlined regarding grouping types of work by grouping jobs regarding Presidential Regulation Number 12/2013. The Recipient Workers participants in question are civil servants, army, police, state officials, private employees, and workers who are not the above workers but receive wages (Indonesian Central Statistics Agency, 2022; Wulandari *et al.*, 2023). The results show that civil servants and workers in the private sector are workers who receive salaries.

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Furthermore, participants in the entrepreneurial sector in the 2013 presidential regulation tend to go to non-worker participants (investors and employers), while informal workers approach non-paid worker participants. This finding is almost identical to the National Social Security Council report, which stated that paid-worker participants were the second largest group after CAR. In contrast, non-paid workers and non-worker participants experienced a decrease (Angelita, Lukman and Tahir, 2022). For CAR participants the NHI report shows the highest participation. Some literature states that the factors that affect NHI participation are the type of job, education, residence type, marital status, age, and economic status (Laksono, Nugraheni, *et al.*, 2022; Wulandari, Laksono, Sillehu, *et al.*, 2022; Putri, Laksono and Rohmah, 2023).

Furthermore, the results also found six control factors significantly associated with NHI membership among workers. The six are the type of residence, gender, age group, education level, marital, and wealth status. Based on the kind of residence, workers in urban regions are 1.506 times more likely to be NHI members than those in rural areas (95% CI 1.504-1.507). This result aligns with previous research in 2020, where the social security program for workers in urban areas is higher than in rural areas (Purba *et al.*, 2021). Previous research has indicated that living in remote locations, having restricted access, and needing to spend a significant amount of money on transportation to get high-quality medical care are the main causes of this condition (Laksono, Wulandari and Soedirham, 2019; Seran *et al.*, 2020; Wulandari, Laksono and Rohmah, 2021).
In contrast, more health insurance companies may be found in urban areas (Mulenga, Bwalya and Gebremeskel, 2017). As a result of this situation, many rural communities do not participate in the NHI. The outcomes of this study support earlier study that living in rural regions makes it challenging to join NHI (Andayani *et al.*, 2021). According to age group, all categories are more likely to be NHI members than ≤17. As age causes a reduction in health quality, it should tend to raise health investment realized in health insurance. The findings of this study are consistent with earlier research showing that having health insurance is more common among the elderly (Laksono, Wulandari and Matahari, 2021). Moreover, previous research has also found that age is related to NHI involvement (Wang *et al.*, 2021b).

Regarding gender, male membership in NHI is less standard than female membership. The situation contrasts with the results of the 2017–2021 NHI report. The condition can happen because Women desire to use health insurance because they are more conscious of their health (Laksono and Wulandari, 2020; Sisira and Samaratunge, 2020). People are not encouraged to manage health risks by enrolling in a health insurance plan, which results in low demand for health insurance due to inadequate risk communication about the significance of health insurance (Gao, Guan and Wang, 2022). Moreover, a previous study found that women and vulnerable residents tend to be NHI participants (Yosalli and As Shidieq, 2020).

Furthermore, based on education level, all groups are likely to be NHI members rather than primary education. Education influences the selection of health-related information, particularly health insurance (Wulandari and Laksono, 2020; Kusrini *et al.*, 2021). The results of other studies show the same tendency: the higher the education, the more NHI members there become (Laksono, Nantabah, *et al.*, 2022; Wulandari, Laksono, Sillehu, *et al.*, 2022). Meanwhile, all marital statuses were less likely to be members of NHI than those who had never married. Marital status is frequently associated with household income (Megatsari *et al.*, 2021). Because married people have many responsibilities at home, they could decide not to take part in the NHI (Alo, Okedo-Alex and Akamike, 2020), but the result shows that someone married or has been married is expected to be more mature and thinks more about health, which is why many become NHI participants (Laksono, Nantabah, *et al.*, 2022; Wulandari, Laksono, Sillehu, *et al.*, 2022).

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Table 2 shows that all marital statuses are less likely than never-married people to be NHI members. Furthermore, based on wealth status, all classes are likelier to be NHI members than the poorest workers in Indonesia. The condition has been found in many studies. People with higher incomes are likelier to have health insurance. The more affluent a person is, the more likely they are to have health insurance (Laksono, Nantabah, *et al.*, 2022).

Strength and Limitation

Using big data as an analysis tool in this study provides advantages that allow the conclusions to be applied nationally. Conversely, only variables provided by the Ministry of Health of the Republic of Indonesia are permitted in this study's secondary data analysis. We could not look into other previously identified variables influencing health insurance enrollment. Having children, having owned commercial insurance in the past, cognitive capacity, and family size are some of the variables (Alo, Okedo-Alex and Akamike, 2020; Wang *et al.*, 2021a; Laksono, Rukmini, *et al.*, 2022).

Conclusion

The study concluded that disparities in occupation type in NHI membership existed among workers in Indonesia. Government employees and the private sector were more likely than the informal sector to be NHI members; meanwhile, entrepreneurs were less likely to be NHI members than the informal sector.

The policy implications must have robust supporting data for membership based on the type of work. For non-salaried worker participants, it must be corrected so there is no definition overlap and no opportunity for fraud. Based on the conclusion, we recommend that the government have accurate data about participants based on the type of work regarding Presidential Regulation Number 12 of 2013.

Abbreviations

PHC: primary healthcare; NHI: national health insurance; UHC: universal health coverage; HSSAA: Health Social Security Administration Agency; CAR: contribution assistance recipients; AOR: adjusted odds ratio; CI: confidence interval.

Declarations

Ethics approval and consent participant

The national ethics committee has approved the survey's integrity (Number: LB.0201/2/KE.340/2019). The study's participants have provided written consent to take part.

Conflict of Interest

The authors clarify that they have no competing interests.

Availability of data and materials

The authors cannot distribute the data because another party controls it without permission to share it. The researchers requested the dataset from Indonesia's Ministry of Health (https://layanandata.kemkes.go.id/). The authors had no special access privileges that others would not have.

Authors' contributions

RDW and ADL created the proposal, evaluated the data, and interpreted the patient data. TT and MHH greatly aided in the study's execution, data interpretation, and manuscript preparation. NP and IK made significant contributions to the study and manuscript writing. All writers read and approved the final manuscript.

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